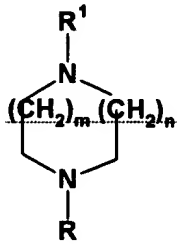
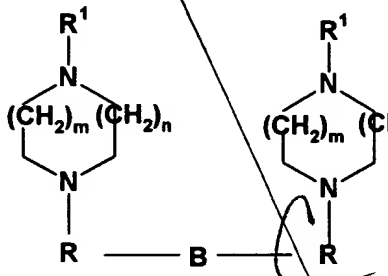
AMENDED CLAIM SET:

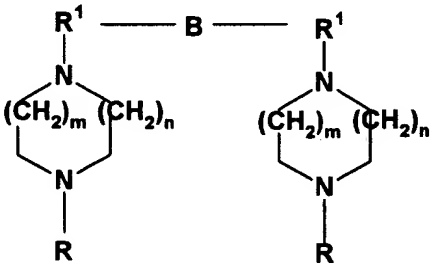
1. (currently amended) A ~~diazacycloalkane derivative represented by the general Formula I~~



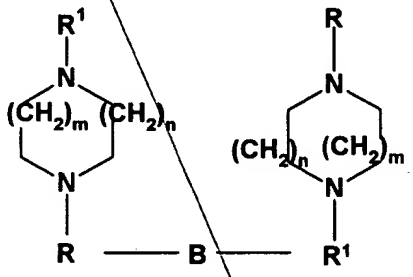
~~or a dimeric compound thereof~~ diazacycloalkane derivative represented by ~~either~~ ~~of~~ Formulae II, III or IV



(II)



(III)



(IV)

any of its enantiomers or any mixture thereof, an N oxide thereof, a

pharmaceutically acceptable salt thereof, in a labelled or un-labelled form,

wherein,

n is 1~~, 2 or 3~~; and
m is ~~0, 1 or 2~~; and

R represents hydrogen, an alkyl group, a cycloalkyl group, a cycloalkylalkyl group, or an alkenyl group~~, an alkynyl group, an aralkyl group, an alkoxypyridyl group, or an alkenoxypyridyl group; or; and~~

B1

R^1 represents pyridyl, pyridazinyl, quinolinyl or isoquinolinyl, which monocyclic or bicyclic heterocyclic group is optionally substituted one or more times with substituents selected from the group consisting of alkyl, alkoxy, cycloalkoxy, alkoxyalkoxy, alkoxyalkenyl, alkoxyalkynyl, alkynyl, alkenyl, alkenylthio, alkylseleno, alkoxycycloalkyl, hydroxyalkoxy, alkylthio, arylalkylthio, alkenoxy, alkynoxy, carboxylamido, arylalkylthio, arylthio, hydroxy, trifluoromethanesulfonyloxy, halogen; phenyl; phenyl substituted with alkyl, alkoxy, hydroxy, amino, or nitro; a pyrrolinyl, a piperidinyl, a tetrahydropyridinyl or a morpholinyl group; and

"-R-B-R-" in Formula II represents a single bond bridge ("-", i.e. R and B are absent), or a bridging group of the formula "R-R-" (i.e. B is absent), or a bridging group of the formula "-R-" (i.e. R is absent in only one of the two compounds making up the dimeric substance); or
"R-B-R^1" in Formula IV represents a single bond bridge ("-", i.e. R, B and R^1 are absent), or a bridging group of the formula "R-R^1-" (i.e. B is absent); or
"R-B" in Formula IV represents a single bond bridge ("-", i.e. R and B are absent, R^1 is present); or

~~R and R^4 are identical and represent **a monocyclic 5 to 6 membered heterocyclic group**, which heterocyclic group may be substituted one or more times with alkyl, alkoxy, cycloalkyl, cycloalkoxy, alkoxycycloalkyl,~~

~~cycloalkoxyalkoxy, cycloalkylalkyl, hydroxyalkoxy, alkenyl, alkoxyalkenyl, alkynyl, alkoxyalkynyl, alkenoxy, alkynoxy, alkylthio, alkenylthio, alkynylthio, alkylseleno, alkenylseleno, alkynylseleno, methylenedioxy, trifluoromethanesulfonyloxy, halogen, -OH, $-CF_3$, $-OCF_3$, -CN, amino, nitro, oxime, alkyloxime, acyloxime, or a group of the formula $-COOR^3$, $-CONR^2R^3$, $-NH-CO_2R^2$, $-NHCO-R^2$ or $-OCO-NR^2R^3$, in which formulae R^2 and R^3 independently of each another represents hydrogen or alkyl; and~~

~~R^4 represents~~ **a monocyclic 5 to 6 membered heterocyclic group**~~,~~

~~which heterocyclic group may be substituted one or more times with alkyl, alkoxy, cycloalkyl, cycloalkoxy, alkoxycycloalkyl, cycloalkoxyalkoxy, cycloalkylalkyl, hydroxyalkoxy, alkenyl, alkoxyalkenyl, alkynyl, alkoxyalkynyl, alkenoxy, alkynoxy, alkylthio, alkenylthio, alkynylthio, alkylseleno, alkenylseleno, alkynylseleno, methylenedioxy, trifluoromethanesulfonyloxy, halogen, -OH, $-CF_3$, $-OCF_3$, -CN, amino, nitro, oxime, alkyloxime, acyloxime, or a group of the formula $-COOR^3$, $-CONR^2R^3$, $-NH-CO_2R^2$, $-NHCO-R^2$ or $-OCO-NR^2R^3$, in which formulae R^2 and R^3 independently of each another represents hydrogen or alkyl, or~~

~~which heterocyclic group may be substituted with an aryl group, which aryl group may optionally be substituted one or more times with alkyl, cycloalkyl, cycloalkylalkyl alkenyl, alkynyl, alkoxy, cycloalkoxy, alkenoxy, alkynoxy, methylenedioxy, halogen, -OH, $-CF_3$, $-OCF_3$, -CN, amino, nitro, oxime, alkyloxime, or acyloxime; or~~

~~which heterocyclic group may be substituted with a group of the formula "-X-alkyl-Y-alkyl", in which formula X and Y independently of each another represent O (epoxy), S, NH, N-alkyl or Se; and alkyl is optionally substituted with alkoxy, or alkylthio; or~~

~~which heterocyclic group may be substituted with a group of the formula "-X-~~

~~$(ALK)_o$-aryl", in which formula X represents O, S, NH, N-alkyl or Se; "ALK" represents alkyl, alkenyl or alkynyl; aryl is optionally substituted one or more times with alkyl, cycloalkyl, cycloalkylalkyl alkenyl, alkynyl, alkoxy, cycloalkoxy, alkenoxy, alkynoxy, methylenedioxy, halogen, -OH, $-CF_3$, $-OCF_3$, -CN, amino, nitro, oxime, alkyloxime, or acyloxime; and o is 0 or 1; or~~

~~which heterocyclic group may be substituted with a group of the formula "$-X-(ALK)_o-Z$", in which formula "ALK" represents alkyl, alkenyl or alkynyl; X represents O, S, NH, N-alkyl or Se; Z represents a 5- or 6-membered monocyclic heterocyclic group, which heterocyclic group is optionally substituted one or more times with alkyl, cycloalkyl, cycloalkylalkyl alkenyl, alkynyl, alkoxy, cycloalkoxy, alkenoxy, alkynoxy, methylenedioxy, halogen, -OH, $-CF_3$, $-OCF_3$, -CN, amino, nitro, oxime, alkyloxime, or acyloxime; and o is 0 or 1; or~~

~~which heterocyclic group may be substituted with another monocyclic 5 to 6 membered heterocyclic group, which additional heterocyclic group may be substituted one or more times with alkyl, cycloalkyl, cycloalkylalkyl, alkenyl, alkynyl, alkoxy, cycloalkoxy, alkenoxy, alkynoxy, methylenedioxy, halogen, -OH, $-CF_3$, $-OCF_3$, -CN, amino, nitro, oxime, alkyloxime, or acyloxime; or~~

~~which heterocyclic group may be substituted with a group of the formula "$(ALK)_o$-HET", in which formula "ALK" represents alkyl, alkenyl or alkynyl; o is 0 or 1; and HET represents a non-aromatic heterocyclic group; or~~

~~or R^1 represents~~ **a bicyclic heterocyclic group**, ~~which bicyclic group is composed of a 5 to 6 membered monocyclic heterocyclic group fused to a benzene ring;~~

~~which bicyclic group may be substituted one or more times with alkyl, alkoxy, alkoxy-alkoxy, cycloalkyl, cycloalkoxy, alkoxycycloalkyl, cycloalkoxyalkoxy,~~

~~cycloalkylalkyl, hydroxyalkoxy, alkenyl, alkoxyalkenyl, alkynyl, alkoxyalkynyl, alkenoxy, alkynoxy, alkylthio, alkenylthio, alkynylthio, alkylseleno, alkenylseleno, alkynylseleno, methylenedioxy, trifluoromethanesulfonyloxy, halogen, -OH, -CF_3, -OCF_3, -CN, amino, nitro, oxime, alkyloxime, acyloxime, or a group of the formula -$COOR^3$, -$CONR^2R^3$, -$NH-CO_2R^2$, -$NHCO-R^2$ or -$OCO-NR^2R^3$; in which formulae R^2 and R^3 independently of each another represents hydrogen or alkyl; or~~

~~which bicyclic group may be substituted with an aryl group, which aryl group is optionally substituted one or more times with alkyl, cycloalkyl, cycloalkylalkyl alkenyl, alkynyl, alkoxy, cycloalkoxy, alkenoxy, alkynoxy, methylenedioxy, halogen, -OH, -CF_3, -OCF_3, -CN, amino, nitro, oxime, alkyloxime, or acyloxime; or~~

~~which bicyclic group may be substituted with an additional monocyclic 5 to 6 membered heterocyclic group, which additional heterocyclic group is optionally substituted one or more times with alkyl, cycloalkyl, cycloalkylalkyl alkenyl, alkynyl, alkoxy, cycloalkoxy, alkenoxy, alkynoxy, methylenedioxy, halogen, -OH, -CF_3, -OCF_3, -CN, amino, nitro, oxime, alkyloxime, or acyloxime; or~~

"-R^1-B-R^1-" in Formula III represents a single bond bridge ("-", i.e. R^1 and B are absent), or a bridging group of the formula "R^1-R^1-" (i.e. B is absent), or a bridging group of the formula "-R^1-" (i.e. R^1 is absent in only one of the two compounds making up the dimeric substance); or
"R^1-B-R" in Formula IV represents a single bond bridge ("-", i.e. R, B and R^1 are absent), or a bridging group of the formula "R^1-R-" (i.e. B is absent); or
"R^1-B" in Formula IV represents a single bond bridge ("-", i.e. R^1 and B are absent, R is present); or

R and/or R^1, together with the nitrogen atom to which they are attached, represent

an alkyl-onium salt, a dialkyl-onium salt, a cycloalkyl-onium salt, an alkyl-cycloalkyl-onium salt, a dicycloalkyl-onium salt, an alkyl-cycloalkylalkyl-onium salt, a cycloalkyl-cycloalkylalkyl-onium salt, or a dicycloalkylalkyl-onium salt; and

B represents a single bond bridge ("-", i.e. B is absent), or a bridging element of the formula "-ALK-", "-ALK-X-ALK-", "-X-ALK-X-", "-PHE-", "-X-PHE-X-", or "-ALK-PHE-ALK-"; wherein "ALK" represents a single bond bridge ("-", i.e. ALK is absent), or alkyl, alkenyl, or alkynyl; and "PHE" represents a phenylene (benzene-diyl) group; and X represents O, S, NH, N-alkyl or Se.

2. (cancelled).

3. (cancelled).

4. (currently amended) The diazacycloalkane derivative of claim 1, wherein R^1 represents

5-(1-heptynyl)-3-pyridyl;
5-(1-hexynyl)-3-pyridyl;
5-(1-pentynyl)-3-pyridyl;
5-(1-butynyl)-3-pyridyl;
5-(1-propynyl)-3-pyridyl;
5-ethylenethio-3-pyridyl;
5-(1-propylenethio)-3-pyridyl;
5-(1-butylenethio)-3-pyridyl;
5-(1-pentylenethio)-3-pyridyl;
5-ethyleneseleno-3-pyridyl;
5-(1-propyleneseleno)-3-pyridyl;
5-(1-butyleneseleno)-3-pyridyl;
5-(1-pentyleneseleno)-3-pyridyl;
5-methylseleno-3-pyridyl;

5-ethylseleno-3-pyridyl;
5-propylseleno-3-pyridyl;
5-butylseleno-3-pyridyl;
~~1-[5-1-butyl-N-methylamino)3-pyridyl];~~
~~5-(N-azacyclobutenyl)-3-pyridyl;~~
5-(N-2-pyrrolinyl)-3-pyridinyl;
5-(N-3-pyrrolinyl)-3-pyridinyl;
5-N-(1,4,5,6-tetrahydropyridinyl)-3-pyridyl;
5-N-(1,2,5,6-tetrahydropyridinyl)-3-pyridyl;
~~5-(homopiperazinyl)-3-pyridyl;~~
5,6-dibromo-3-pyridyl;
5-bromo-6-chloro-3-pyridyl;
6-bromo-5-chloro-3-pyridyl;
6-bromo-3-pyridyl;
5,6-dichloro-3-pyridyl;
6-fluoro-3-pyridyl;
6-iodo-3-pyridyl;
5-chloro-6-fluoro-3-pyridyl;
5-chloro-6-iodo-3-pyridyl;
5-bromo-6-fluoro-3-pyridyl;
5-bromo-6-iodo-3-pyridyl;
6-fluoro-pyridazinyl;
6-iodopyridazinyl;
5-pentyloxy-3-pyridyl;
5-(*trans*-hex-2-en-1-yl-oxy)-3-pyridyl;
5-butoxy-3-pyridyl;
5-methoxy-3-pyridyl;
5-propyloxy-3-pyridyl;
~~5-homopiperazinyl-3-pyridyl;~~
5-ethoxy-3-pyridyl;
5-propyl-1,2-epoxy-1-oxy-3-pyridyl;

5-phenylacetylenyl-3-pyridyl;
5-(2-ethyl-1-butoxy)-3-pyridyl;
5-(1-methyl-1-prop-2-en-oxy)-3-pyridyl;
5-(cyclobutylmethoxy)-3-pyridyl;
5-(hex-2-en-oxy)-3-pyridyl;
5-(2-methyl-1-prop-1-en-oxy)-3-pyridyl;
5-(1-piperidinyl)-3-pyridyl;
5-(N-azacycloheptyl)-3-pyridyl;
5-(N-azacyclooctanyl)-3-pyridyl; or
5-(1-morpholinyl)-3-pyridyl.

5. (cancelled).

6. (original) The diazacycloalkane derivative of Formula III of claim 1, wherein "-R^1-B-R^1-" represents a single bond bridge ("-", i.e. R^1 and B are absent), or a bridging group of the formula "R^1-R^1-" (i.e. B is absent), or a bridging group of the formula "-R^1-" (i.e. R^1 is absent in only one of the two compounds making up the dimeric substance); or B is a bridging group of the formula "-X-ALK-X-", wherein "ALK" represents C_{1-4}-alkyl; or B is a bridging group of the formula "-ALK-PHE-ALK-", wherein "ALK" represents C_{1-4}-alkyl, and "PHE" represents a phenylene group.

7. (original) The diazacycloalkane derivative of claim 6, said compound being
3,5-*Bis*-(N,N´-homopiperazinyl)-pyridine;
1,4-[α,α´-*Bis*-(5-Ethoxy-3-pyridyl-1-homopiperazinyl)]-dimethylbenzene;
1,4-[α,α´-*Bis*-(6-Chloro-3-pyridazinyl-1-homopiperazinyl)]-dimethylbenzene;
O,O´-*Bis*-[5-(1-homopiperazinyl)-3-pyridyl]-ethyleneglycol; or
Homopiperazinyl-5-pyrid-3-yl-5-pyrid-3-yl-homopiperazine;
any of its enantiomers or any mixture thereof, an N oxide thereof, a pharmaceutically acceptable salt thereof, in a labelled or un-labelled form.

8. (currently amended) A pharmaceutical composition comprising a therapeutically-effective amount of a diazacycloalkane derivative of ~~any of the claims 1-7~~ claim 1, or a pharmaceutically-acceptable addition salt thereof, together with at least one pharmaceutically-acceptable carrier or diluent.

9. (cancelled).

10. (cancelled).

11. (cancelled).

12. (currently amended) A method of ~~diagnosis,~~ treatment, prevention or alleviation of a disease or a disorder or a condition of a living animal body, including a human, which disorder, disease or condition is responsive to the activity of nAChR modulators, comprising the step of administering to such a living animal body, including a human, in need thereof a therapeutically effective amount of ~~a~~ the diazacycloalkane derivative of ~~any of the claims 1-7~~ claim 1.

13. (cancelled).

14. (original) The method according to claim 12, wherein a disease in the central or peripheral system, said disease being Alzheimer's disease, Parkinson's disease, memory dysfunction or attention deficit hyperactivity disorder, is treated.